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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,141	02/12/2001	Yvan Novis	P 62705 US 0	5330

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PIPER MARBURY RUDNICK & WOLFE LLP
1200 NINETEENTH STREET, N.W.
WASHINGTON, DC 20036-2412

EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1775

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DATE MAILED: 05/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/719,141

Applicant(s)

NOVIS ET AL.

Examiner

Andrew T Piziali

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-51 is/are allowed.
- 6) ☒ Claim(s) 52-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. The numbering of the claims is improper. As submitted, in the pre-amendment, by the applicant on 2/12/01, claim 57 does not exist and two claims are numbered claim 68. Misnumbered claims 58-68 have been renumbered 57-68 and are referred to in this action as such.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 52-59 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,584,902 to Hartig.

Regarding claims 52-59, Hartig discloses a transparent substrate carrying a coating stack comprising one metallic coating layer comprising silver, in contact with two non-absorbent transparent dielectric coating layers, characterized in that prior to heat treatment, each of the dielectric coating layers comprise a layer based on a partially, but not totally oxidized, combination of nickel and chromium (column 9, lines 10-22 and column 10, lines 33-38).

Regarding claims 56-57, the nickel/chromium combination layer located furthest from the glass substrate, is a sub-layer of its non-absorbent transparent coating layer (Figure 3).

Regarding claims 58-59, Hartig discloses subjecting the glass article to heat-treatment by way of tempering or bending (column 5, lines 37-40). Hartig discloses that the emissivity is less

than 0.11 after heat treatment (claim 11). Hartig does not mention the haze, but considering the substantially identical glass article of Hartig, as compared to the applicant's, the glass article of Hartig should possess a haze of less than 0.5%.

The coating thicknesses and compositions impart energy absorption and light transmittance properties within the coated article while affecting the spectral properties. The thickness of each layer is a function of the desired component stack and the preferred reflectivity. The thicknesses and optical characteristics of the coating stack may be adjusted to achieve a broad range of specified emissivity and haze values. The desired attributes may be obtainable by adjusting the compositions and thicknesses of the coating layers. In the event that the glass article of Hartig does not possess the applicants claimed haze and emissivity values, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the thicknesses and/or compositions, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. ***In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).**

Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 60 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,584,902 to Hartig in view of US Patent No. 5,965,246 to Guiselin.

Regarding claims 60 and 69, Hartig discloses a transparent substrate carrying a five layer coating stack comprising one metallic coating layer comprising silver, in contact with two non-absorbent transparent dielectric coating layers, characterized in that prior to heat treatment, each of the dielectric coating layers comprise a layer based on a partially, but not totally oxidized; combination of nickel and chromium (column 9, lines 10-22 and column 10, lines 33-38).

Hartig discloses that the dielectric layer closest to the glass substrate comprises silicon nitride (column 9, lines 10-22). Hartig does not mention substituting titanium oxide for the silicon nitride layer, but Guiselin discloses that titanium oxide and silicon nitride may be used interchangeably, because they possess similar refractive indices (column 5, lines 9-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute titanium oxide for the silicon nitride dielectric layer closest to the glass substrate of Hartig, because they layers are functionally equivalent.

Regarding claim 69, Hartig discloses that it is known in the art to convert a five layer system into a seven layer system, because it exhibits higher durability and scratch resistance compared to a five-layer system (column 7, lines 35-46). It would have been obvious to one

Art Unit: 1775

having ordinary skill in the art at the time the invention was made to construct a seven layer system, comprising the five layer system of Hartig with an additional silver layer and an additional nickel/chromium combination layer, because a seven layer system provides higher durability and scratch resistance compared to a five layer system.

6. Claims 61-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,584,902 to Hartig.

Regarding claims 61-68, Hartig discloses a transparent substrate carrying a five layer coating stack comprising one metallic coating layer comprising silver, in contact with two non-absorbent transparent dielectric coating layers, characterized in that prior to heat treatment, each of the dielectric coating layers comprise a layer based on a partially, but not totally oxidized, combination of nickel and chromium (column 9, lines 10-22 and column 10, lines 33-38).

Hartig discloses that it is known in the art to convert a five-layer system into a seven layer system, because it exhibits higher durability and scratch resistance compared to a five-layer system (column 7, lines 35-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a seven layer system, comprising the five layer system of Hartig with an additional silver layer and an additional nickel/chromium combination layer, because a seven layer system provides higher durability and scratch resistance compared to a five layer system.

Regarding claim 65, the nickel/chromium combination layer located furthest from the glass substrate (Figure 3), is a sub-layer of its non-absorbent transparent coating layer.

Regarding claims 67-68, Hartig discloses subjecting the glass article to heat-treatment by way of tempering or bending (column 5, lines 37-40). Hartig discloses that the emissivity is less

Art Unit: 1775

than 0.11 after heat treatment (claim 11). Hartig does not mention the haze, but considering the substantially identical glass article of Hartig, as compared to the applicant's, the glass article of Hartig should possess a haze of less than 0.5%.

The coating thicknesses and compositions impart energy absorption and light transmittance properties within the coated article while affecting the spectral properties. The thickness of each layer is a function of the desired component stack and the preferred reflectivity. The thicknesses and optical characteristics of the coating stack may be adjusted to achieve a broad range of specified emissivity and haze values. The desired attributes may be obtainable by adjusting the compositions and thicknesses of the coating layers. In the event that the glass article of Hartig does not possess the applicants claimed haze and emissivity values, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the thicknesses and/or compositions, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Allowable Subject Matter

7. Claims 25-51 are allowed.

8. The following is an examiner's statement of reasons for allowance:

The closest prior art is US Patent No. 5,584,902 to Hartig. Hartig discloses a transparent substrate carrying a coating stack comprising one metallic coating layer comprising silver or a silver alloy, in contact with two non-absorbent transparent dielectric coating layers, characterized in that prior to heat treatment, each of the dielectric coating layers comprise a layer based on a partially, but not totally oxidized, combination of nickel and chromium (column 9, lines 10-22 and column 10, lines 33-38).

Hartig discloses that the nickel/chromium layers surround the silver layer(Figure 3). The effect of these surrounding layers is such that the silver layer behaves as if it was a homogeneous metal slab, while being thin enough that it is ineffective at changing the optical properties of the article. Therefore, Hartig teaches a dielectric coating layer, furthest from the glass substrate, comprising a sub-layer based on partially, but not totally oxidized, combination of nickel and chromium, but fails to teach or suggest that the dielectric coating layer closest to the glass substrate comprises a sub-layer based on a partially, but not totally oxidized, combination of nickel and chromium. It would not have been obvious to one having ordinary skill in the art at the time the invention was made to use a nickel/chromium sub-layer below the dielectric layer located closest to the glass substrate, because it was not known that this structure would continue to protect the silver layer while improving the articles ability to withstand heat treatment.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Piziali whose telephone number is (703) 306-0145 and whose fax number is (703) 746-7037. The examiner can normally be reached Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached at (703) 308-3822. The fax numbers for the

Art Unit: 1775

organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5665.



atp

May 6, 2002



DEBORAH JONES
SUPERVISORY PATENT EXAMINER